# 10/720,707

# **WEST Search History**

Hide Items Restore Clear Cancel

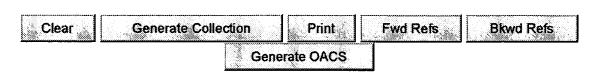
DATE: Tuesday, February 15, 2005

Hide?	Set Name	Query	Hit Count
	DB = USB	PT; PLUR=YES; OP=OR	
	L15	6388168.pn.	1
	L14	5877402.pn.	1
	L13	L12 not 13	33
	L12	19 same L11	35
	L11	(untranslated adj region\$) or utr\$	11490
	L10	18 same L9	647
	L9	12 same 17	1287
	L8	(untranslated region) or utr\$	807332
. 🗆	L7	transform\$ or transgen\$ or transplastom\$	352512
	L6	L5 not 13	0
	L5	12 and L4	4
	L4	mcfadden.in.	383
	L3	11 and L2	5
	L2	chloroplast or plastid	3427
	L1	daniell.in.	83

**END OF SEARCH HISTORY** 

Record List Display Page 1 of 2

## **Hit List**



#### **Search Results -** Record(s) 1 through 5 of 5 returned.

☐ 1. Document ID: US 6680426 B2

L3: Entry 1 of 5

File: USPT

Jan 20, 2004

US-PAT-NO: 6680426

DOCUMENT-IDENTIFIER: US 6680426 B2

TITLE: Genetic engineering of plant <a href="chloroplasts">chloroplasts</a>

Full | Title | Citation | Front | Review | Classification | Date | Reference | State | State | State | State | Claims | KMC | Draw, De

☐ 2. Document ID: US 6642053 B1

L3: Entry 2 of 5

File: USPT

Nov 4, 2003

US-PAT-NO: 6642053

DOCUMENT-IDENTIFIER: US 6642053 B1

TITLE: Genetic engineering of plant chloroplasts

Full Title Citation Front Review Classification Date Reference Company Claims RANC Draw De Claims RANC Dra

US-PAT-NO: 6004782

DOCUMENT-IDENTIFIER: US 6004782 A

TITLE: Hyperexpression of bioelastic polypeptides

Full Title Citation Front Review Classification Date Reference **Provinces Ministry** Claims KMC Draw De

☐ 4. Document ID: US 5932479 A

L3: Entry 4 of 5

File: USPT

Aug 3, 1999

US-PAT-NO: 5932479

DOCUMENT-IDENTIFIER: US 5932479 A

Record List Display Page 2 of 2

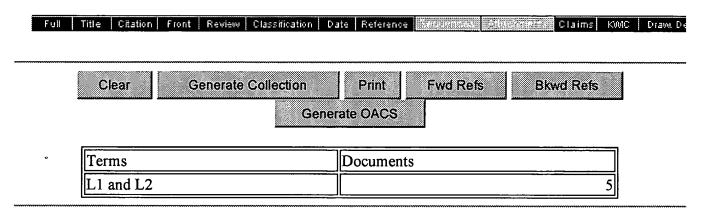
TITLE: Genetic engineering of plant chloroplasts

Full Title Citation Front Review CI	assification Date Reference <b>19.00 Rings</b>	Claims KMC Draw De					
☐ 5. Document ID: US 5693507 A							
L3: Entry 5 of 5	File: USPT	Dec 2, 1997					

US-PAT-NO: 5693507

DOCUMENT-IDENTIFIER: US 5693507 A

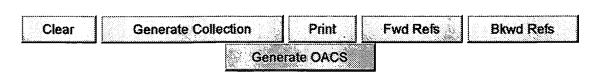
TITLE: Genetic engineering of plant chloroplasts



Display Format: TI Change Format

Previous Page Next Page Go to Doc#

#### **Hit List**



**Search Results -** Record(s) 1 through 10 of 33 returned.

☐ 1. Document ID: US 6808904 B2

L13: Entry 1 of 33

File: USPT

Oct 26, 2004

US-PAT-NO: 6808904

DOCUMENT-IDENTIFIER: US 6808904 B2

TITLE: Herbicide-tolerant protox genes produced by DNA shuffling

Full Title Citation Front Review Classification Date Reference Section Section Claims KWC Draw. De

☐ 2. Document ID: US 6803501 B2

L13: Entry 2 of 33

File: USPT

Oct 12, 2004

US-PAT-NO: 6803501

DOCUMENT-IDENTIFIER: US 6803501 B2

TITLE: Methods for making plants tolerant to glyphosate and compositions thereof

using a DNA encoding an EPSPS enzyme from Eleusine indica

Full | Title | Citation | Front | Review | Classification | Date | Reference | Military No. | Military No. | Claims | KWIC | Draw. De

☐ 3. Document ID: US 6689589 B2

L13: Entry 3 of 33

File: USPT

Feb 10, 2004

US-PAT-NO: 6689589

DOCUMENT-IDENTIFIER: US 6689589 B2

\*\* See image for Certificate of Correction \*\*

TITLE: Biological systems for manufacture of polyhydroxyalkanoate polymers containing 4-hydroxyacids

Full | Title | Citation | Front | Review | Classification | Date | Reference | Structure | Classification | Draw. De

☐ 4. Document ID: US 6686516 B2

L13: Entry 4 of 33

File: USPT

Feb 3, 2004

US-PAT-NO: 6686516

Record List Display Page 2 of 3

DOCUMENT-IDENTIFIER: US 6686516 B2

TITLE: Expression of trehalose 6-phosphate synthase in plant plastids

☐ 5. Document ID: US 6660911 B2

L13: Entry 5 of 33

File: USPT

Dec 9, 2003

Jul 1, 2003

US-PAT-NO: 6660911

DOCUMENT-IDENTIFIER: US 6660911 B2

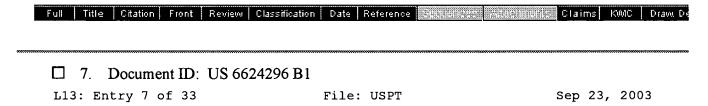
TITLE: Plant expression constructs

Full Title Citation Front Review Classification Date Reference South State Claims KMC Draw De ☐ 6. Document ID: US 6657046 B1 L13: Entry 6 of 33 File: USPT Dec 2, 2003

US-PAT-NO: 6657046

DOCUMENT-IDENTIFIER: US 6657046 B1

TITLE: Insect inhibitory lipid acyl hydrolases



US-PAT-NO: 6624296

DOCUMENT-IDENTIFIER: US 6624296 B1

TITLE: Plastid promoters for transgene expression in the plastids of higher plants

Full Title Citation Front Review Classification Date Reference SCONDITION — COLUMN Claims KWC Draw De □ 8. Document ID: US 6586658 B1

File: USPT

US-PAT-NO: 6586658

DOCUMENT-IDENTIFIER: US 6586658 B1

L13: Entry 8 of 33

TITLE: Modification of fatty acid metabolism in plants

Full Title Ortation Front Review Classification Date Reference Statement 1997 1997 1997 Claims KWIC Draw, De

☐ 9. Document ID: US 6501009 B1

L13: Entry 9 of 33

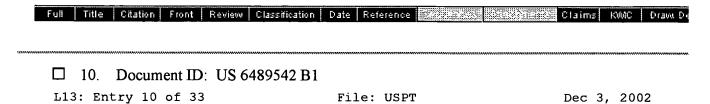
File: USPT

Dec 31, 2002

US-PAT-NO: 6501009

DOCUMENT-IDENTIFIER: US 6501009 B1

TITLE: Expression of Cry3B insecticidal protein in plants

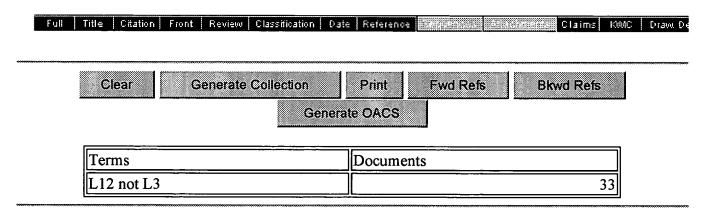


US-PAT-NO: 6489542

DOCUMENT-IDENTIFIER: US 6489542 B1

TITLE: Methods for transforming plants to express Cry2Ab .delta.-endotoxins

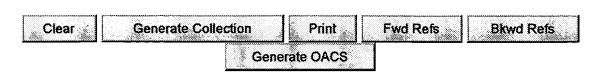
targeted to the plastids



Display Format: TI Change Format

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# **Hit List**



**Search Results -** Record(s) 11 through 20 of 33 returned.

☐ 11. Document ID: US 6472586 B1

L13: Entry 11 of 33

File: USPT

Oct 29, 2002

US-PAT-NO: 6472586

DOCUMENT-IDENTIFIER: US 6472586 B1

TITLE: Nuclear-encoded transcription system in plastids of higher plants

Full Title Citation Front Review Classification Date Reference Segments (1997) Claims KWC Draw, De

☐ 12. Document ID: US 6468523 B1

L13: Entry 12 of 33

File: USPT

Oct 22, 2002

US-PAT-NO: 6468523

DOCUMENT-IDENTIFIER: US 6468523 B1

TITLE: Polypeptide compositions toxic to diabrotic insects, and methods of use

Full Title Citation Front Review Classification Date Reference Statements Statement Claims Kinic Draw Do

13. Document 1D. 05 0402250

L13: Entry 13 of 33

File: USPT

Oct 8, 2002

US-PAT-NO: 6462258

DOCUMENT-IDENTIFIER: US 6462258 B1

TITLE: Plant expression constructs

Full Title Citation Front Review Classification Date Reference Structures Review Claims KWC Draw. De

☐ 14. Document ID: US 6448476 B1

L13: Entry 14 of 33

File: USPT

Sep 10, 2002

US-PAT-NO: 6448476

DOCUMENT-IDENTIFIER: US 6448476 B1

Record List Display Page 2 of 3

TITLE: Plants and plant cells transformation to express an AMPA-N-acetyltransferase

Full | Title | Citation | Front | Review | Classification | Date | Reference | Complete | Complete

☐ 15. Document ID: US 6388168 B1

L13: Entry 15 of 33

File: USPT

May 14, 2002

US-PAT-NO: 6388168

DOCUMENT-IDENTIFIER: US 6388168 B1

TITLE: DNA constructs and methods for stably transforming plastids of multicellular

plants and expressing recombinant proteins therein

Full Title Citation Front Review Classification Date Reference **EXECUTIVES STREET S.** Claims KMC Draw De

☐ 16. Document ID: US 6376744 B1

L13: Entry 16 of 33

File: USPT

Apr 23, 2002

US-PAT-NO: 6376744

DOCUMENT-IDENTIFIER: US 6376744 B1

TITLE: Plastid transformation in Arabidopsis thaliana

Full | Title | Citation | Front | Review | Classification | Date | Reference | <u>ROSSUMERS | MEDICINES |</u> Claims | KWIC | Draw. De

☐ 17. Document ID: US 6362398 B1

L13: Entry 17 of 33

File: USPT

Mar 26, 2002

US-PAT-NO: 6362398

DOCUMENT-IDENTIFIER: US 6362398 B1

TITLE: ClpP plastid promoter sequence

Full Title Citation Front Review Classification Date Reference Supplies 200 - Citation Front Review Classification Date Reference

☐ 18. Document ID: US 6353153 B1

L13: Entry 18 of 33

File: USPT

Mar 5, 2002

US-PAT-NO: 6353153

DOCUMENT-IDENTIFIER: US 6353153 B1

TITLE: Enhanced transport with a plastid membrane transport protein

Full Title Citation Front Review Classification Date Reference (Computer Section Claims KWC Draw, De

☐ 19. Document ID: US 6316262 B1

L13: Entry 19 of 33

File: USPT

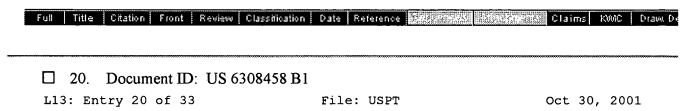
Nov 13, 2001

US-PAT-NO: 6316262

DOCUMENT-IDENTIFIER: US 6316262 B1

TITLE: Biological systems for manufacture of polyhydroxyalkanoate polymers

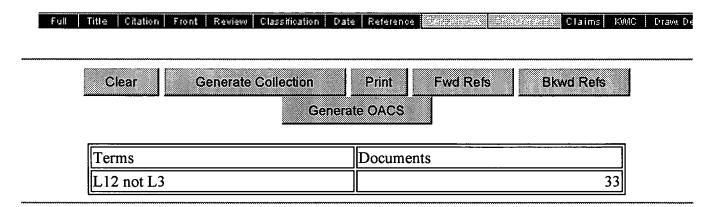
containing 4-hydroxyacids



US-PAT-NO: 6308458

DOCUMENT-IDENTIFIER: US 6308458 B1

TITLE: Herbicide-tolerant plants and methods of controlling the growth of undesired vegetation



Display Format: TI Change Format

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Record List Display Page 1 of 3

## **Hit List**

Clear Generate Collection Print Fwd Refs Bkwd Refs
Generate OACS

Search Results - Record(s) 21 through 30 of 33 returned.

☐ 21. Document ID: US 6294653 B1

L13: Entry 21 of 33

File: USPT

Sep 25, 2001

US-PAT-NO: 6294653

DOCUMENT-IDENTIFIER: US 6294653 B1

TITLE: RNA binding protein and binding site useful for expression of recombinant

molecules

Full Title Citation Front Review Classification Date Reference Communication Date Reference Communication District Claims KWC Draw De

☐ 22. Document ID: US 6239332 B1

L13: Entry 22 of 33

File: USPT

May 29, 2001

US-PAT-NO: 6239332

DOCUMENT-IDENTIFIER: US 6239332 B1

\*\* See image for <u>Certificate of Correction</u> \*\*

TITLE: Constructs and methods for enhancing protein levels in photosynthetic

organisms

☐ 23. Document ID: US 6156517 A

L13: Entry 23 of 33

File: USPT

Dec 5, 2000

US-PAT-NO: 6156517

DOCUMENT-IDENTIFIER: US 6156517 A

TITLE: RNA binding protein and binding site useful for expression of recombinant

molecules

Full | Title | Citation | Front | Review | Classification | Date | Reference | Structure | Claims | Claims | KWC | Draw, De

☐ 24. Document ID: US 6084155 A

L13: Entry 24 of 33

File: USPT

Jul 4, 2000

Record List Display Page 2 of 3

US-PAT-NO: 6084155

DOCUMENT-IDENTIFIER: US 6084155 A

TITLE: Herbicide-tolerant protoporphyrinogen oxidase ("protox") genes

Full Title Citation Front Review Classification Date Reference Carte 127 127 127 Claims KMC Draw De ☐ 25. Document ID: US 6023012 A

L13: Entry 25 of 33

File: USPT

Feb 8, 2000

US-PAT-NO: 6023012

DOCUMENT-IDENTIFIER: US 6023012 A

TITLE: DNA molecules encoding plant protoporphyrinogen oxidase

Full Title Citation Front Review Classification Date Reference Company 200 (1997) Claims KNNC Draw De

☐ 26. Document ID: US 6011198 A

L13: Entry 26 of 33

File: USPT

Jan 4, 2000

US-PAT-NO: 6011198

DOCUMENT-IDENTIFIER: US 6011198 A

\*\* See image for <u>Certificate of Correction</u> \*\*

TITLE: Constructs and methods for enhancing protein levels in photosynthetic

organisms

Full Title Citation Front Review Classification Date Reference Control (Control (Con

☐ 27. Document ID: US 5939602 A

L13: Entry 27 of 33

File: USPT

Aug 17, 1999

US-PAT-NO: 5939602

DOCUMENT-IDENTIFIER: US 5939602 A

\*\* See image for Certificate of Correction \*\*

TITLE: DNA molecules encoding plant protoporphyrinogen oxidase and inhibitorresistant mutants thereof

☐ 28. Document ID: US 5925806 A

L13: Entry 28 of 33

File: USPT

Jul 20, 1999

US-PAT-NO: 5925806

DOCUMENT-IDENTIFIER: US 5925806 A

Record List Display Page 3 of 3

TITLE: Controlled expression of transgenic constructs in plant plastids

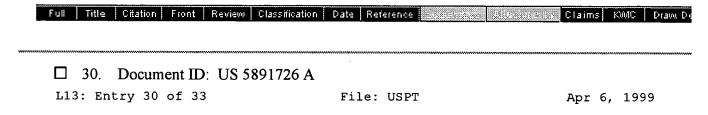
Full Title Citation Front Review Classification	the control of the co	Claims KWC Drawn De
☐ 29. Document ID: US 5919999 A		
L13: Entry 29 of 33	File: USPT	Jul 6, 1999

US-PAT-NO: 5919999

DOCUMENT-IDENTIFIER: US 5919999 A

\*\* See image for <u>Certificate of Correction</u> \*\*

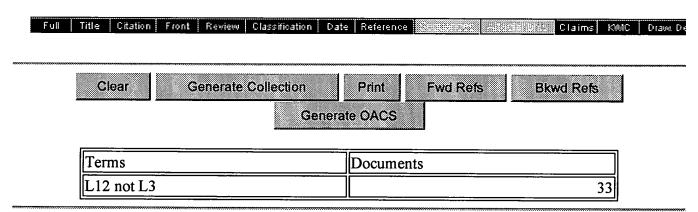
TITLE: Enhanced transport with a plastid membrane transport protein



US-PAT-NO: 5891726

DOCUMENT-IDENTIFIER: US 5891726 A

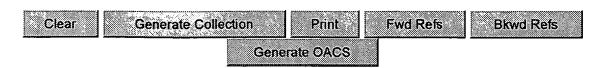
TITLE: Procedure to increase the seed productivity of plants and to accelerate the growth of plants by means of an additional plastidic pyruvate, phosphate dikinase



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#### **Search Results -** Record(s) 31 through 33 of 33 returned.

☐ 31. Document ID: US 5877402 A

L13: Entry 31 of 33

File: USPT

Mar 2, 1999

US-PAT-NO: 5877402

DOCUMENT-IDENTIFIER: US 5877402 A

\*\* See image for Certificate of Correction \*\*

TITLE: DNA constructs and methods for stably transforming plastids of multicellular plants and expressing recombinant proteins therein



☐ 32. Document ID: US 5576198 A

L13: Entry 32 of 33

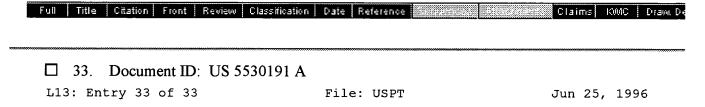
File: USPT

Nov 19, 1996

US-PAT-NO: 5576198

DOCUMENT-IDENTIFIER: US 5576198 A

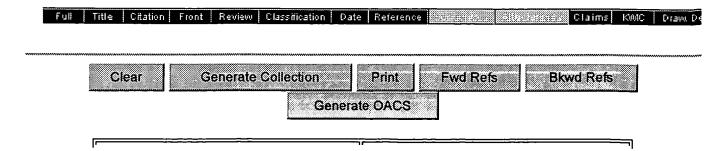
TITLE: Controlled expression of transgenic constructs in plant plastids



US-PAT-NO: 5530191

DOCUMENT-IDENTIFIER: US 5530191 A

TITLE: Method for producing cytoplasmic male sterility in plants and use thereof in production of hybrid seed



Terms	Documents
L12 not L3	33

Display Format: TI Change Format

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```
10/720,707 2/15/04
=> file ca
=> s (daniell, h?)/au
           118 (DANIELL, H?)/AU
=> s (chloroplast? or plastid?)/ab,bi
         46716 (CHLOROPLAST? OR PLASTID?)/AB, BI
L2
=> s l1 and l2
            62 L1 AND L2
=> s (transform? or transgen? or transplastom?)/ab,bi
L4
        600057 (TRANSFORM? OR TRANSGEN? OR TRANSPLASTOM?)/AB, BI
=> s 13 and 14
            37 L3 AND L4
=> file biosis
=> s 15
L6
            37 L3 AND L4
=> dup rem
             59 DUP REM L5 L6 (15 DUPLICATES REMOVED)
=> d 17 1-59 ti py
     ANSWER 1 OF 59 CA COPYRIGHT 2005 ACS on STN
L7
TI
     Methods for synthesis of human insulin-like growth factor 1 in
       ***transgenic*** plant
                                 ***chloroplasts*** for production of vaccine
PY
     2004
L7
     ANSWER 2 OF 59 CA COPYRIGHT 2005 ACS on STN
ΤI
     Expression of human interferon in ***transgenic***
       ***chloroplasts***
PΥ
     2004
     2004
L7
     ANSWER 3 OF 59 CA COPYRIGHT 2005 ACS on STN
       ***Chloroplast*** expression of genes for enzymes of mercury
TI
     metabolism and the phytoremediation of organomercurial contamination
PY
     2004
     2004
     ANSWER 4 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation.
L7
TI
     Genetic engineering of plant ***chloroplasts***
PΥ
     2004
L7
     ANSWER 5 OF 59 CA COPYRIGHT 2005 ACS on STN
                                                      DUPLICATE 1
     Enhanced translation of a ***chloroplast*** -expressed RbcS gene
TI
     restores small subunit levels and photosynthesis in nuclear RbcS antisense
     plants
PY
     2004
L7
     ANSWER 6 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation.
     STN
ΤI
     Expression of Bacillus anthracis protective antigen in ***transgenic***
```

\*\*\*chloroplasts\*\*\* of tobacco, a non-food/feed crop.

```
PY 2004
```

- L7 · ANSWER 7 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 2
- TI \*\*\*Plastid\*\*\* -expressed betaine aldehyde dehydrogenase gene in carrot cultured cells, roots, and leaves confers enhanced salt tolerance
- PY 2004
- L7 ANSWER 8 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI High-yield expression of a viral peptide animal vaccine in
- \*\*\*transgenic\*\*\* tobacco \*\*\*chloroplasts\*\*\*
- PY 2004
- L7 ANSWER 9 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Expression of protective antigens in \*\*\*transgenic\*\*\*
  - \*\*\*chloroplasts\*\*\* and the production of improved vaccines
- PY 2003
  - 2003
  - 2004
- L7 ANSWER 10 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Genetic engineering of plant \*\*\*chloroplasts\*\*\* .
- PY 2003
- L7 ANSWER 11 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 3
- TI Phytoremediation of organomercurial compounds via \*\*\*chloroplast\*\*\* genetic engineering
- PY 2003
- L7 ANSWER 12 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Engineering the \*\*\*chloroplast\*\*\* genome for biotechnology applications
- PY 2003
- L7 ANSWER 13 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI A \*\*\*chloroplast\*\*\* \*\*\*transgenic\*\*\* approach to hyper-express and purify Human Serum Albumin, a protein highly susceptible to proteolytic degradation
- PY 2003
- L7 ANSWER 14 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 4
- TI Accumulation of trehalose within \*\*\*transgenic\*\*\* \*\*\*chloroplasts\*\*\* confers drought tolerance
- PY 2003
- L7 ANSWER 15 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Engineering the \*\*\*chloroplast\*\*\* genome to confer stress tolerance and production of pharmaceutical proteins
- PY 2002
- L7 ANSWER 16 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 5
- TI Multigene engineering: dawn of an exciting new era in biotechnology
- PY 2002
- L7 ANSWER 17 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 6
- TI Milestones in \*\*\*chloroplast\*\*\* genetic engineering: An environmentally friendly era in biotechnology
- PY 2002
- L7 ANSWER 18 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Environmentally friendly approaches in biotechnology: engineering the \*\*\*chloroplast\*\*\* genome to confer stress tolerance
- PY 2002

- L7 ANSWER 19 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of Bacillus anthracis protective antigen in \*\*\*transgenic\*\*\*

  \*\*\*chloroplasts\*\*\* towards the development of an improved vaccine or an edible vaccine.
- PY 2002
- L7 ANSWER 20 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Optimization of codon composition and regulatory elements for expression of human insulin-like growth factor 1 in \*\*\*transgenic\*\*\*

  \*\*\*chloroplasts\*\*\* .
- PY 2002
- L7 ANSWER 21 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of monoclonal antibodies in \*\*\*transgenic\*\*\*

  \*\*\*chloroplasts\*\*\* .
- PY 2002
- L7 ANSWER 22 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of synthetic human hemoglobin genes in \*\*\*transgenic\*\*\* tobacco \*\*\*chloroplasts\*\*\* .
- PY 2002
- L7 ANSWER 23 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Manipulation of gene regulation in \*\*\*transgenic\*\*\* tobacco

  \*\*\*chloroplasts\*\*\* results in hyper-expression of human serum albumin,
  formation of inclusion bodies and facilitates purification.
- PY 2002
- L7 ANSWER 24 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN DUPLICATE 7
- TI Efficient \*\*\*chloroplast\*\*\* \*\*\*transformation\*\*\* of tomato with an edible selectable marker.
- PY 2002
- L7 ANSWER 25 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of the Bt (cry2Aa2) gene in \*\*\*transgenic\*\*\* cotton \*\*\*chloroplasts\*\*\* .
- PY 2002
- L7 ANSWER 26 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of glpA/B operon in \*\*\*transgenic\*\*\* \*\*\*chloroplasts\*\*\*
  to degrade glyphosate.
- PY 2002
- L7 ANSWER 27 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Production of human insulin-like growth factor I (IGF-I), human serum albumin (HAS), or interferons (IFN) via \*\*\*transgenic\*\*\*

  \*\*\*chloroplast\*\*\* genome in tobacco
- PY 2001
- L7 ANSWER 28 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI \*\*\*Transgenic\*\*\* tobacco expressing SIgA genes to produce assembled antibody for therapeutic uses
- PY 2001

- L7 ANSWER 29 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Expression of an antimicrobial peptide via the \*\*\*plastid\*\*\* genome to control phytopathogenic bacteria
- PY 2001
- L7 ANSWER 30 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI \*\*\*Transgenic\*\*\* plants expressing yeast trehalose-6-phosphate synthase (TPS1) for tolerance of drought stress
- PY 2001
- L7 ANSWER 31 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Expression of multiple genes in a single operon in plants and uses as insecticides and in degrading inorganic or organic metal compounds in soil and water
- PY 2001
- L7 ANSWER 32 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Methods of engineering the \*\*\*chloroplast\*\*\* genome with antibiotic-free phytotoxic agents as a system of selection
- PY 2001
- L7 ANSWER 33 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 8
- TI Expression of the Native Cholera Toxin B Subunit Gene and Assembly as Functional Oligomers in \*\*\*Transgenic\*\*\* Tobacco \*\*\*Chloroplasts\*\*\*
- PY 2001
- L7 ANSWER 34 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 9
- TI Expression of an antimicrobial peptide via the \*\*\*chloroplast\*\*\* genome to control phytopathogenic bacteria and fungi
- PY 2001
- L7 ANSWER 35 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI \*\*\*Chloroplast\*\*\* \*\*\*transgenic\*\*\* approach for the production of biopharmaceuticals and resolution of basic questions on gene expression.
- PY 2001
- L7 ANSWER 36 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Antibiotic-free \*\*\*chloroplast\*\*\* genetic engineering an environmentally friendly approach
- PY 2001
- L7 ANSWER 37 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
- TI Antibiotic-free \*\*\*chloroplast\*\*\* genetic engineering: An environmentally friendly approach.
- PY 2001
- L7 ANSWER 38 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 10
- TI Marker free \*\*\*transgenic\*\*\* plants: engineering the

  \*\*\*chloroplast\*\*\* genome without the use of antibiotic selection
- PY 2001
- L7 ANSWER 39 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 11
- TI Overexpression of the Bt cry2Aa2 operon in \*\*\*chloroplasts\*\*\* leads to formation of insecticidal crystals
- PY 2001
- L7 ANSWER 40 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Stable expression of a biodegradable protein-based polymer in tobacco \*\*\*chloroplasts\*\*\*
- PY 2000

- L7 ANSWER 41 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Universal \*\*\*chloroplast\*\*\* integration and expression vectors,

  \*\*\*transformed\*\*\* plants and their products
- PY 1999
- L7 ANSWER 42 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 12
- TI Overexpression of the Bacillus thuringiensis (Bt) Cry2Aa2 protein in

  \*\*\*chloroplasts\*\*\* confers resistance to plants against susceptible and
  Bt-resistant insects
- PY 1999
- L7 ANSWER 43 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
- TI Environmentally friendly approaches to genetic engineering.
- PY 1999
- L7 ANSWER 44 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Stable expression of a biodegradable protein-based polymer in tobacco \*\*\*chloroplasts\*\*\* .
- PY 1999
- L7 ANSWER 45 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI \*\*\*Plastid\*\*\* \*\*\*transformed\*\*\* rice.
- PY 1999
- L7 ANSWER 46 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 13
- TI Containment of herbicide resistance through genetic engineering of the \*\*\*chloroplast\*\*\* genome
- PY 1998
- L7 ANSWER 47 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI \*\*\*Chloroplast\*\*\* \*\*\*transformation\*\*\* of rice.
- PY 1998
- L7 ANSWER 48 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Genetic engineering of plant \*\*\*chloroplasts\*\*\*
- PY 1997
- L7 ANSWER 49 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on
- TI \*\*\*Transformation\*\*\* and foreign gene expression in plants mediated by microprojectile bombardment.
- PY 1997
- L7 ANSWER 50 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI \*\*\*Transformation\*\*\* and foreign gene expression in plants mediated by microprojectile bombardment
- PY 1997
- L7 ANSWER 51 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI \*\*\*Transformation\*\*\* of the tobacco \*\*\*chloroplast\*\*\* genome with the aroA gene to confer glyphosate tolerance.
- PY 1996
- L7 ANSWER 52 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI Expression of a synthetic gene for biodegradable plastics in tobacco \*\*\*chloroplasts\*\*\* .
- PY 1996

- L7 ANSWER 53 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI. A novel method to study DNA replication in vivo in organelles
- PY 1993
- L7 ANSWER 54 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Foreign gene expression in \*\*\*chloroplasts\*\*\* of higher plants mediated by tungsten particle bombardment
- PY 1993
- L7 ANSWER 55 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Transient expression of .beta.-glucuronidase in different cellular compartments following biolistic delivery of foreign DNA into wheat leaves and calli
- PY 1991
- L7 ANSWER 56 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 14
- TI Optimization of delivery of foreign DNA into higher-plant
- \*\*\*chloroplasts\*\*\*
- PY 1990
- L7 ANSWER 57 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI RESTORATION OF DELETIONS IN THE \*\*\*CHLOROPLAST\*\*\* GENOME OF WHEAT POLLEN ALBINO PLANTS A MODEL SYSTEM FOR \*\*\*CHLOROPLAST\*\*\*

  \*\*\*TRANSFORMATION\*\*\* .
- PY 1990
- L7 ANSWER 58 OF 59 CA COPYRIGHT 2005 ACS on STN
- TI Transient foreign gene expression in \*\*\*chloroplasts\*\*\* of cultured tobacco cells after biolistic delivery of \*\*\*chloroplast\*\*\* vectors
- PY 1990
- L7 ANSWER 59 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- TI INTERACTION FUNCTIONAL RELATIONS AND EVOLUTION OF LARGE AND SMALL SUBUNITS IN RUBISCO FROM PROKARYOTA AND EUKARYOTA.
- PY 1986

#### => d 17 55-59 ab bib

- L7 ANSWER 55 OF 59 CA COPYRIGHT 2005 ACS on STN
- Transient expression of .beta.-glucuronidase (GUS) in different cellular AΒ compartments followed biolistic delivery of \*\*\*chloroplast\*\*\* or nuclear expression vectors into wheat leaves or calli, derived from anther culture or immature embryos, is reported. When pBI121, the nuclear GUS vector, was used in bombard wheat cells, the .beta.-glucuronidase product, an insol. indigo dye, was obsd. evenly throughout the cytosol. But, when \*\*\*chloroplast\*\*\* expression vector pHD203-GUS was used for bombardments, the indigo dye (GUS product) was subcellularly localized within the \*\*\*chloroplasts\*\*\* of wheat cells. The observation of GUS expression in albino \*\*\*plastids\*\*\* , when anther culture derived albino leaves were bombarded with the \*\*\*chloroplast\*\*\* expression vector pHD203-GUS, suggests the presence of a functional protein synthetic machinery in these organelles. GUS expression was also obsd. in regenerable calli derived from wheat immature embryos bombarded with pHD203-GUS. Leaves or calli bombarded with pUC19, as neg. controls, did not show any GUS expression. These results constitute the 1st demonstration of foreign gene expression in \*\*\*chloroplasts\*\*\* of a monocot and that a dicot \*\*\*chloroplast\*\*\* promoter functions in a \*\*\*chloroplast\*\*\* monocot

TI Transient expression of .beta.-qlucuronidase in different cellular compartments following biolistic delivery of foreign DNA into wheat leaves and calli \*\*\*Daniell, H.\*\*\* ; Krishnan, M.; McFadden, B. F. ΑU have Dep. Biol. Sci., Univ. Idaho, Moscow, ID, 83843, USA CS SO Plant Cell Reports (1991), 9(11), 615-19 CODEN: PCRPD8; ISSN: 0721-7714 DTJournal LΑ English L7 ANSWER 56 OF 59 CA COPYRIGHT 2005 ACS on STN DUPLICATE 14 AΒ An efficient and highly reproducible delivery system was developed, using an improved biolistic \*\*\*transformation\*\*\* device, that facilitates transient expression of .beta.-glucuronidase (GUS) in \*\*\*chloroplasts\*\*\* of cultured tobacco suspension cells. Cultured tobacco cells collected on filter papers were bombarded with tungsten particles coated with pUC118 or pBI101.3 (neq. controls), bBI505 (pos. nuclear control) or a \*\*\*chloroplast\*\*\* expression vector (pHD203-GUS), and were assayed for GUS activity. No GUS activity was detected in cells bombarded with pUC118 or pBI101.3. Cells bombarded with pBI505 showed high levels of expression with blue color being distributed evenly throughout the whole cytosol of \*\*\*transformants\*\*\* . PHD203-GUS was expressed exclusively in \*\*\*chloroplasts\*\*\* . This conclusion was based on: (i) the prokaryotic nature of the promoter used in the \*\*\*chloroplast\*\*\* expression vector; (ii) delayed GUS staining; (iii) localization of blue color within subcellular compartments corresponding to \*\*\*plastids\*\*\* in both shape and size; and (iv) confirmation of organelle-specific expression of pHD203-GUS using PEG-mediated protoplast \*\*\*transformation\*\*\* dramatically (about 200-fold) using an improved helium-driven biolistic device, as compared to the more commonly used gun powder charge-driven device. Using GUS as a reporter gene and the improved biolistic device, optimal bombardment conditions were established, consistently producing several hundred transient \*\*\*chloroplast\*\*\* \*\*\*transformants\*\*\* per Petri plate. \*\*\*Chloroplast\*\*\* \*\*\*transformation\*\*\* efficiency was found to be increased further (20-fold) with supplemental osmoticum (0.55 M sorbitol and 0.55 M mannitol) in the bombardment and incubation medium. This system provides a highly effective mechanism for introducing and expressing plasmid DNA within higher-plant \*\*\*chloroplasts\*\*\* , and the fact that GUS functions as an effective marker gene now makes many genetic studies possible which were not possible before. have AN 114:116271 CA ΤI Optimization of delivery of foreign DNA into higher-plant \*\*\*chloroplasts\*\*\* Ye, Guang Ning; \*\*\*Daniell, Henry\*\*\*; Sanford, John C. Dep. Hortic. Sci., Cornell Univ., Geneva, NY, 14456, USA ΑU CS SO Plant Molecular Biology (1990), 15(6), 809-19 CODEN: PMBIDB; ISSN: 0167-4412 DTJournal LΑ English L7 ANSWER 57 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN 1990:506243 BIOSIS AN

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281.

PREV199039118239; BR39:118239

HOLME I [Reprint author]; ZEMETRA R;

\*\*\*TRANSFORMATION\*\*\*

RESTORATION OF DELETIONS IN THE \*\*\*CHLOROPLAST\*\*\*

DEP BIOL SCI, UNIV IDAHO, MOSCOW, IDAHO 83843, USA

POLLEN ALBINO PLANTS A MODEL SYSTEM FOR \*\*\*CHLOROPLAST\*\*\*

Journal of Cellular Biochemistry Supplement, (1990) No. 14 PART E, pp.

GENOME OF WHEAT

\*\*\*DANIELL H\*\*\*

Meeting Info.: SYMPOSIUM ON MOLECULAR STRATEGIES FOR CROP IMPROVEMENT HELD AT THE 19TH ANNUAL UCLA (UNIVERSITY OF CALIFORNIA-LOS ANGELES) SYMPOSIA ON MOLECULAR AND CELLULAR BIOLOGY, KEYSTONE, COLORADO, USA, APRIL 16-22, 1990. J CELL BIOCHEM SUPPL.

ISSN: 0733-1959.

- DT Conference; (Meeting)
- FS BF
- LA ENGLISH
- ED Entered STN: 10 Nov 1990
  - Last Updated on STN: 10 Nov 1990
- L7 ANSWER 58 OF 59 CA COPYRIGHT 2005 ACS on STN
- AB Expression of chloramphenicol acetyltransferase (cat) by suitable vectors in \*\*\*chloroplasts\*\*\* of cultured tobacco cells, delivered by high-velocity microprojectiles, is reported here. Several

\*\*\*chloroplast\*\*\* expression vectors contg. bacterial cat genes, placed under the control of either the psbA promoter region from pea (pHD series) or the rbcL promoter region from maize (pAC series) have been used in this study. In addn., \*\*\*chloroplast\*\*\* expression vectors contg. replicon fragments from pea, tobacco, or maize \*\*\*chloroplast\*\*\* DNA have also been tested for efficiency and duration of cat expression in

been tested for efficiency and duration of cat expression in \*\*\*chloroplasts\*\*\* of tobacco cells. Cultured NT1 tobacco cells collected on filter papers were bombarded with tungsten particles coated with pUC118 (neg. control), 35S-CAT (nuclear expression vector), pHD312 \*\*\*chloroplast\*\*\* (repliconless expression vector), and pHD407, pACp18, and pACp19 ( \*\*\*chloroplast\*\*\* expression vectors with replicon). Sonic exts. of cells bombarded with pUC118 showed no detectable cat activity in the autoradiograms. Nuclear expression of cat reached two-thirds of the maximal 48 h after bombardment and the maximal at 72 h. Cells bombarded with \*\*\*chloroplast\*\*\* expression vectors showed a low level of expression until 48 h of incubation. A dramatic increase in the expression of cat was obsd. 24 h after the addn. of fresh medium to cultured cells in samples bombarded with pHD407; the repliconless vector pHD312 showed about 50% of this maximal activity. The expression of nuclear cat and the repliconless \*\*\*chloroplast\*\*\* vector decreased after 72 h, but a high level of \*\*\*chloroplast\*\*\* cat expression was maintained in cells bombarded with pHD407. Organelle-specific expression of cat in appropriate compartments was checked by introducing various plasmid constructions into tobacco protoplasts by electroporation. Although the nuclear expression vector 35S-CAT showed expression of cat, no activity was obsd. with any

AN 112:71471 CA

\*\*\*chloroplast\*\*\*

- TI Transient foreign gene expression in \*\*\*chloroplasts\*\*\* of cultured tobacco cells after biolistic delivery of \*\*\*chloroplast\*\*\* vectors
- AU \*\*\*Daniell, H.\*\*\*; Vivekananda, J.; Nielsen, B. L.; Ye, G. N.; Tewari, K. K.; Sanford, J. C.
- CS Dep. Biol. Sci., Univ. Idaho, Moscow, ID, 83843, USA

vectors.

- SO Proceedings of the National Academy of Sciences of the United States of America (1990), 87(1), 88-92 CODEN: PNASA6; ISSN: 0027-8424
- DT Journal
- LA English
- L7 ANSWER 59 OF 59 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
- AB In early biological evolution anoxygenic photosynthetic bacteria may have been established through the acquisition of ribulose bisphosphate carboxylase-oxygenase (Rubisco). The establishment of cyanobacteria may have followed and led to the production of atmospheric oxygen. It has been postulated that a unicellular cyanobacterium evolved to cyanelles which were evolutionary precursors of \*\*\*chloroplasts\*\*\* of both green and non-green algae. The latter probably diverged from ancestors of green

```
algae as evidenced by the occurrence of large (L) and small (S) subunit
     genes for Rubisco in the ***chloroplast*** genome of the chromophytic
    algae Olisthodiscus luteus. In contrast, the gene for the S subunit was
     integrated into the nucleus in the evolution of green algae and higher
    plants. The evolutionary advantages of this integration are uncertain
     because the function of S subunits is unknown. Recently, two forms of
     Rubisco (L8 and L8S8) of almost equivalent carboxylase and oxygenase
     activity have been isolated from the photosynthetic bacterium Chromatium
     vinosum. This observation perpetuates the enigma of S subunit function.
     Current breakthroughs are imminent, however, in our understanding of the
     function of catalytic L subunits because of the application of
     deoxyoligonucleotide-directed mutagenesis. Especially interesting mutated
     Rubisco molecules may have either enhanced carboxylase activity or higher
     carboxylase:oxygenase ratios. Tests of expression, however, must await
     the insertion of modified genes into the nucleus and ***chloroplasts***
       Methodology to accomplish
                                  ***chloroplast***
                                                         ***transformation***
     is as yet unavailable. Recently, we have obtained the first
       ***transformation***
                            of cyanobacteria by a colE1 plasmid. We regard
            ***transformation*** as an appropriate model for
       ***chloroplast***
                            ***transformation***
     1987:130376 BIOSIS
     PREV198783069437; BA83:69437
     INTERACTION FUNCTIONAL RELATIONS AND EVOLUTION OF LARGE AND SMALL SUBUNITS
     IN RUBISCO FROM PROKARYOTA AND EUKARYOTA.
     MCFADDEN B A [Reprint author]; TORRES-RUIZ J; ***DANIELL H***
     SAROJINI G
     BIOCHEMISTRY/BIOPHYSICS PROGRAM, WASHINGTON STATE UNIVERSITY, PULLMAN,
     WASHINGTON 99164-4660, USA
     Philosophical Transactions of the Royal Society of London B Biological
     Sciences, (1986) Vol. 313, No. 1162, pp. 347-358.
     ISSN: 0962-8436.
     Article
    BA
     ENGLISH
     Entered STN: 7 Mar 1987
     Last Updated on STN: 7 Mar 1987
=> file ca
=> s (mcfadden, b?)/au
          183 (MCFADDEN, B?)/AU
=> s 18 and 12
            5 L8 AND L2
=> s 19 not 13
            1 L9 NOT L3
=> file biosis
=> s l10
            0 L9 NOT L3
=> file ca
=> d 110
    ANSWER 1 OF 1 CA COPYRIGHT 2005 ACS on STN
     119:245958 CA
    Location of Rubisco and chaperonin 60 in Flaveria species by
     immunoelectron microscopy
    Torres-Ruiz, Jose A.; Franceschi, Vincent R.; ***McFadden, Bruce A.***
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CS
     Dep. Biochem., Ponce Sch. Med., Ponce, 00732, P. R.
SO
     Res. Photosynth., Proc. Int. Congr. Photosynth., 9th (1992), Volume 3,
            Editor(s): Murata, Norio. Publisher: Kluwer, Dordrecht, Neth.
     625-8.
     CODEN: 59IZA5
DT
     Conference
LΑ
     English
=> d 110 ab
=> s ((5(2w)untranslated(w)region?) or (5(2w)utr?))/ab,bi
L12
          7029 ((5(2W)UNTRANSLATED(W)REGION?) OR (5(2W)UTR?))/AB,BI
=> s 12 and 14
         2716 L2 AND L4
L13
=> s 112 and 113
           42 L12 AND L13
L15
=> s 115 not 15
L16
           37 L15 NOT L5
=> file biosis
=> s 116
L17
           24 L15 NOT L5
=> dup rem
            37 DUP REM L16 L17 (24 DUPLICATES REMOVED)
L18
=> d l18 1-37 ti py
L18
    ANSWER 1 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 1
TI
     Cytokinin stimulates polyribosome loading of nuclear-encoded mRNAs for the
       ***plastid*** ATP synthase in etioplasts of Lupinus luteus: the complex
     accumulates in the inner-envelope membrane with the CF1 moiety located
     towards the stromal space
PΥ
     2004
L18
    ANSWER 2 OF 37 CA COPYRIGHT 2005 ACS on STN
                                                      DUPLICATE 2
TI
    Development of a luciferase reporter gene, luxCt, for Chlamydomonas
     reinhardtii ***chloroplast***
PY
     2004
L18
    ANSWER 3 OF 37 CA COPYRIGHT 2005 ACS on STN
TI
     Use of ***chloroplast*** transcription and translation signals and
     codon bias in expression of foreign genes in photosynthetic cells
PΥ
     2003
     2004
    ANSWER 4 OF 37 CA COPYRIGHT 2005 ACS on STN
L18
                                                       DUPLICATE 3
ΤI
     The 5'-proximal hairpin of turnip yellow mosaic virus RNA: Its role in
     translation and encapsidation
PΥ
     2003
L18
    ANSWER 5 OF 37 CA COPYRIGHT 2005 ACS on STN
                                                       DUPLICATE 4
    Multiple translational control sequences in the 5' leader of the
TI
       ***chloroplast*** psbC mRNA interact with nuclear gene products in
     Chlamydomonas reinhardtii
PΥ
     2003
```

- L18 ANSWER 6 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 5
- TI The stem-loop region of the tobacco psbA5'UTR is an important determinant of mRNA stability and translation efficiency

PY 2003

- L18 ANSWER 7 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 6
- TI Effect of coding regions on \*\*\*chloroplast\*\*\* gene expression in Chlamydomonas reinhardtii
- PY 2003
- L18 ANSWER 8 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Construction of bicistronic- \*\*\*transgene\*\*\* expression vectors containing internal ribosome entry site (IRES) regulated selectable marker for \*\*\*transgenic\*\*\* plants
- PY 2002
- L18 ANSWER 9 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Overexpression of the clpP \*\*\*5\*\*\* '- \*\*\*untranslated\*\*\*

  \*\*\*region\*\*\* in a chimeric context causes a mutant phenotype, suggestin competition for a clpP-specific RNA maturation factor in tobacco

  \*\*\*chloroplasts\*\*\*
- PY 2002
- L18 ANSWER 10 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 7
- TI Development of a GFP reporter gene for Chlamydomonas reinhardtii \*\*\*chloroplast\*\*\*
- PY 2002
- L18 ANSWER 11 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Protoporphyrinogen oxidase genes of crop plants and their use in the development of herbicide-resistant plants
- PY 2001
- L18 ANSWER 12 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Specific sequence elements in the \*\*\*5\*\*\* ' \*\*\*untranslated\*\*\*

  \*\*\*regions\*\*\* of rbcL and atpB gene mRNAs stabilize transcripts in the

  \*\*\*chloroplast\*\*\* of Chlamydomonas reinhardtii
- PY 2001
- L18 ANSWER 13 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Method for producing \*\*\*transgenic\*\*\* plants resistant to glyphosate herbicides
- PY 2000
- L18 ANSWER 14 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Translation control elements for high-level protein expression in the \*\*\*plastids\*\*\* of higher plants and methods of use thereof
- PY 2000
- L18 ANSWER 15 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 8
- TI cis- and trans-acting determinants for translation of psbD mRNA in Chlamydomonas reinhardtii
- PY 2000
- L18 ANSWER 16 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 9
- TI The sequence and secondary structure of the 3'-UTR affect 3'-end maturation, RNA accumulation, and translation in tobacco
  \*\*\*chloroplasts\*\*\*
- PY 2000
- L18 ANSWER 17 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Methods and means for expression of mammalian polypeptides in monocotyledonous plants

1998

- ANSWER 18 OF 37 CA COPYRIGHT 2005 ACS on STN L18
- TIGenes encoding herbicide inhibitor-resistant mutants of plant protoporphyrinogen oxidase and \*\*\*transgenic\*\*\* plants expressing same PΥ
- L18 ANSWER 19 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 10
- TI Mutations altering the predicted secondary structure of a \*\*\*5\*\*\* ' \*\*\*untranslated\*\*\* \*\*\*chloroplast\*\*\* \*\*\*region\*\*\* affect its physical and biochemical properties as well as its ability to promote translation of reporter mRNAs both in the Chlamydomonas reinhardtii \*\*\*chloroplast\*\*\* and in Escherichia coli
- PΥ 1999
- L18 ANSWER 20 OF .37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 11
- Identification of cis-acting RNA leader elements required for TI\*\*\*chloroplast\*\*\* psbD gene expression in Chlamydomonas
- PΥ 1999
- L18 ANSWER 21 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 12
- ΤI Renilla luciferase as a vital reporter for \*\*\*chloroplast\*\*\* gene expression in Chlamydomonas
- PY1999
- L18 ANSWER 22 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 13
- In vivo analysis of \*\*\*plastid\*\*\* psbA, rbcL and rpl32 UTR elements by ΤI gene expression is controlled by modulation of transcript levels and translation efficiency
- PΥ 1999
- L18 ANSWER 23 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 14
- TIExpression of a foreign gene in Chlamydomonas reinhardtii \*\*\*chloroplast\*\*\*
- PY 1999
- ANSWER 24 OF 37 CA COPYRIGHT 2005 ACS on STN L18
- ΤI Increased mRNA stability compensates for reduced dark rbcL transcription rates in tobacco \*\*\*plastids\*\*\*
- PΥ 1998
- L18 ANSWER 25 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 15
- TI rbcL transcript levels in tobacco \*\*\*plastids\*\*\* are independent of light: reduced dark transcription rate is compensated by increased mRNA stability
- PY 1998
- ANSWER 26 OF 37 CA COPYRIGHT 2005 ACS on STN L18 **DUPLICATE 16**
- Analysis of promoter activity for the gene encoding pyruvate  ${ t TI}$ orthophosphate dikinase in stably \*\*\*transformed\*\*\* C4 Flaveria species
- PY 1998
- L18 ANSWER 27 OF 37 CA COPYRIGHT 2005 ACS on STN
- \*\*\*Chloroplast\*\*\* RNA stability TI
- PY 1998
- ANSWER 28 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 17 L18
- TIIn vivo evidence for 5'.fwdarw.3' exoribonuclease degradation of an \*\*\*chloroplast\*\*\* mRNA unstable
- PΥ 1998

- L18 ANSWER 29 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 18
- TI A nuclear-encoded function essential for translation of the \*\*\*chloroplast\*\*\* psaB mRNA in Chlamydomonas
- PY 1997
- L18 ANSWER 30 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI RNA stability and translational regulatory elements in the \*\*\*5\*\*\* '
  \*\*\*untranslated\*\*\* \*\*\*regions\*\*\* of two Chlamydomonas
  \*\*\*chloroplast\*\*\* transcripts
- PY 1997
- L18 ANSWER 31 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 19
- TI Post-transcriptional regulation of \*\*\*chloroplast\*\*\* gene expression in Chlamydomonas reinhardtii
- PY 1996
- L18 ANSWER 32 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 20
- TI petD mRNA maturation in Chlamydomonas reinhardtii \*\*\*chloroplasts\*\*\* : role of 5' endonucleolytic processing
- PY 1994
- L18 ANSWER 33 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 21
- TI The petD gene is transcribed by functionally redundant promoters in Chlamydomonas reinhardtii \*\*\*chloroplasts\*\*\*
- PY 1994
- L18 ANSWER 34 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 22
- TI Translation of psb A mRNA is regulated by light via the \*\*\*5\*\*\* '\*\*\*untranslated\*\*\* \*\*\*region\*\*\* in tobacco \*\*\*plastids\*\*\*
- PY 1994
- L18 ANSWER 35 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 23
- TI Function of the Chlamydomonas reinhardtii petD \*\*\*5\*\*\* '

  \*\*\*untranslated\*\*\* \*\*\*region\*\*\* in regulating the accumulation of subunit IV of the cytochrome b6/f complex
- PY 1994
- L18 ANSWER 36 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 24
- TI In vivo analysis of Chlamydomonas \*\*\*chloroplast\*\*\* petD gene expression using stable \*\*\*transformation\*\*\* of .beta.-glucuronidase translational fusions
- PY 1993
- L18 ANSWER 37 OF 37 CA COPYRIGHT 2005 ACS on STN
- TI Molecular genetic analysis of C4 photosynthesis
- PY 1992
- => d l18 ab bib 9 12 16 19 22
- L18 ANSWER 9 OF 37 CA COPYRIGHT 2005 ACS on STN
- - \*\*\*chloroplasts\*\*\* . In young leaves, NPTII accumulated at 0.26% and 0.8% of the total sol. leaf protein from genes with the clpP and atpB \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* , resp. Interestingly, expression of NPTII from the promoter with the clpP \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* (0.26% NPTII) caused a mutant (chlorotic) phenotype, whereas plants accumulating approx. 0.8% NPTII from the atpB \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* were normal green, indicating that the mutant phenotype was independent of NPTII

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accumulation. Low levels of monocistronic clpP mRNA and accumulation of
    intron-contq. clpP transcripts in the chlorotic leaves suggest competition
                       ***5*** '- ***UTR***
    between the clpP
                                               in the chimeric transcript and
    the native clpP pre-mRNA (ratio 16:1) for an mRNA maturation factor.
    Because maturation of 11 other intron-contg. mRNAs was unaffected in the
    chlorotic leaves, it appears that the factor is clpP specific.
    phenotype is correlated with reduced levels (approx. 2 times) of the ClpP1
    protease subunit, supporting an important role for ClpP1 in
       ***chloroplast***
                          development.
    137:305656 CA
    Overexpression of the clpP
                                 ***5*** '- ***untranslated***
       ***region*** in a chimeric context causes a mutant phenotype, suggestin
    competition for a clpP-specific RNA maturation factor in tobacco
       ***chloroplasts***
    Kuroda, Hiroshi; Maliga, Pal
    Waksman Institute, Rutgers, The State University of New Jersey,
    Piscataway, NJ, 08854-8020, USA
    Plant Physiology (2002), 129(4), 1600-1606
    CODEN: PLPHAY; ISSN: 0032-0889
    American Society of Plant Biologists
    Journal
    English
             THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT
       41
             ALL CITATIONS AVAILABLE IN THE RE FORMAT
    ANSWER 12 OF 37 CA COPYRIGHT 2005 ACS on STN
    Using a series of point mutations in chimeric reporter gene constructs
    consisting of the 5' regions of the Chlamydomonas ***chloroplast***
    rbcL or atpB genes fused 5' to the coding sequence of the bacterial uidA
     (GUS) gene, RNA-stabilizing sequence elements were identified in vivo in
                                                              ( ***5***
           ***5***
                  ' ***untranslated***
                                             ***regions***
     the
       ***UTRs*** ) of transcripts of the
                                           ***chloroplast***
                                                                genes rbcL and
                                                           ***5***
     atpB in Chlamydomonas reinhardtii. In chimeric rbcL
       ***UTR*** :GUS transcripts, replacement of single nucleotides in the
     10-nt sequence 5'-AUUUCCGGAC-3', extending from positions +38 to +47
     relative to the transcripts' 5' terminus, shortened transcript longevity
     and led to a redn. in transcript abundance of more than 95%. A similar
                               ***5*** '
                                            ***UTR***
     mutational anal. of atpB
                                                       :GUS transcripts showed
                                   1
                          ***5***
                                       ***UTR***
     that the 12-nt atpB
                                                   sequence
     5'-AUAAGCGUUAGU-3', extending from position +31 to position +42, is
     important for transcript stability and transcript accumulation in the
       ***chloroplast***
                        of Chlamydomonas. We discuss how the
                  sequence elements, which are predicted to be part of RNA
     secondary structures, might function in RNA stabilization.
     135:222249
                                        ***5*** !
                                                     ***untranslated***
     Specific sequence elements in the
       ***regions*** of rbcL and atpB gene mRNAs stabilize transcripts in the
       ***chloroplast*** of Chlamydomonas reinhardtii
     Anthonisen, Inger Lill; Salvador, Maria L.; Klein, Uwe
     Department of Biology, University of Oslo, Oslo, 0316, Norway
     RNA (2001), 7(7), 1024-1033
     CODEN: RNARFU; ISSN: 1355-8382
     Cambridge University Press
     Journal
     English
              THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT
       53
              ALL CITATIONS AVAILABLE IN THE RE FORMAT
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RNA maturation and modulation of RNA stability play important roles in

DUPLICATE 9

gene expression. In vitro and in vivo studies have

(UTRs) contain sequence and structural elements that guid

\*\*\*5\*\*\* '- and 3'- \*\*\*untranslated\*\*\*

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ANSWER 16 OF 37 CA

shown that both the

\*\*\*regions\*\*\*

\*\*\*chloroplast\*\*\*

these processes, and interact with specific proteins. We have previously characterized the spinach \*\*\*chloroplast\*\*\* petD 3'-UTR in detail by in vitro approaches. This stem-loop forming sequence is a weak terminator but is required for RNA maturation and also exhibits sequence-specific protein binding. To test petD 3'-UTR function in vivo, tobacco

\*\*\*chloroplast\*\*\*

\*\*\*transformants\*\*\*

were generated contg. uidA

reporter genes flanked by variants of the petD 3'-UTR, including one which

does not form an RNA-protein complex in vitro, and one which lacks a

stem-loop structure. Anal. of uidA mRNA indicated that a stable secondary

structure is required to accumulate a discrete mRNA, and that changes in

the 3'-UTR sequence which affect protein binding in vitro can also affect

RNA metab. in vivo. The 3'-UTR also influenced .beta.-glucuronidase

protein accumulation, but not in proportion to RNA levels. These results

raise the possibility that in tobacco \*\*\*chloroplasts\*\*\*, the 3'-UTR

may influence translational yield.

AN 135:105161 CA

TI The sequence and secondary structure of the 3'-UTR affect 3'-end maturation, RNA accumulation, and translation in tobacco
\*\*\*chloroplasts\*\*\*

AU Monde, Rita-Ann; Greene, Jessica C.; Stern, David B.

CS Department of Molecular Biology and Genetics, Boyce Thompson Institute for Plant Research, Cornell University, Ithaca, NY, 14853, USA

Nov

Plant Molecular Biology (2000), 44(4), 529-542

CODEN: PMBIDB; ISSN: 0167-4412

Kluwer Academic Publishers

DT Journal

SO

PB

LA English

RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 19 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 10 AΒ Random mutations were generated in the sequence for the \*\*\*5\*\*\* ( \*\*\*5\*\*\* ' \*\*\*UTR\*\*\* ) of the \*\*\*untranslated\*\*\* \*\*\*region\*\*\* \*\*\*chloroplast\*\*\* rps7 mRNA by PCR, the Chlamydomonas reinhardtii coding sequence for the mutant leaders fused upstream of the lacZ' reporter in pUC18, and \*\*\*transformed\*\*\* into Escherichia coli, and white colonies were selected. Twelve single base pair changes were found \*\*\*5\*\*\* at different positions in the rps7 1 \*\*\*UTR\*\*\* in 207 white colonies examd. Seven of the 12 mutant leaders allowed accumulation of abundant lacZ' message. These mutant rps7 leaders were ligated into an aadA expression cassette and \*\*\*transformed\*\*\* into the

of C. reinhardtii and into E. coli. \*\*\*chloroplast\*\*\* spectinomycin-resistant growth rates and in vitro aminoglycoside adenyltransferase enzyme activity varied considerably between different mutants but were remarkably similar for a given mutant expressed in the \*\*\*chloroplast\*\*\* and in E. coli. The variable effect Chlamydomonas of the mutants on aadA reporter expression and their complete abolition of lacZ' reporter expression in E. coli suggests differences in the \*\*\*5\*\*\* \*\*\*UTR\*\*\* of rps7 and aadA or interaction between the \*\*\*5\*\*\* ' \*\*\*UTR\*\*\* mutations lacZ' coding regions. Several rps7 \*\*\*5\*\*\* ' \*\*\*UTR\*\*\* affected the predicted folding pattern of the weakening the stability of stem structures. Site-directed secondary mutations generated to restore these structures in the second stem suppressed the loss of reporter activity caused by the original mutations. Addnl. site-directed mutations that were predicted to further strengthen (A-U.fwdarw.G-C) or weaken (G-C.fwdarw.A-U) the second stem of the rps7 leader both resulted in reduced reporter expression. This genetic evidence combined with differences between mutant and wild-type UV melting profiles and RNase T1 protection gel shifts further indicate that the predicted wild-type folding pattern in the likely to play an essential role in translation initiation.

AN 132:1287 CA

TI Mutations altering the predicted secondary structure of a

\*\*\*5\*\*\* \*\*\*chloroplast\*\*\* \*\*\*untranslated\*\*\* \*\*\*region\*\*\* affect its physical and biochemical properties as well as its ability to promote translation of reporter mRNAs both in the Chlamydomonas reinhardtii \*\*\*chloroplast\*\*\* and in Escherichia coli AU Fargo, David C.; Boynton, John E.; Gillham, Nicholas W. CS Developmental, Cell and Molecular Biology Group, Departments of Botany and Zoology, Duke University, Durham, NC, 27708, USA SO Molecular and Cellular Biology (1999), 19(10), 6980-6990 CODEN: MCEBD4; ISSN: 0270-7306 PB American Society for Microbiology DT Journal LΑ English RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT L18 ANSWER 22 OF 37 CA COPYRIGHT 2005 ACS on STN DUPLICATE 13 \*\*\*5\*\*\* ' And 3' \*\*\*untranslated\*\*\* \*\*\*regions\*\*\* (UTRs) of AB \*\*\*plastid\*\*\* RNAs act as regulatory elements for post-transcriptional control of gene expression. Polyethylene glycol-mediated \*\*\*plastid\*\*\* \*\*\*transformation\*\*\* with UTR-GUS reporter gene fusions was used to study the function of the psbA, rbcL and rpl32 UTRs in vivo. All gene fusions were expressed from the same promoter, i.e. the promoter of the 16S-rRNA gene, such that variations in RNA and protein levels would be due

to the involved UTR elements alone. \*\*\*Transgenic\*\*\* tobacco lines contg. different combinations of UTRs showed fivefold variation in the uidA-mRNA level (RNA stability) and approx. 100-fold differences in GUS activity, a measure of translation activity. The rbcL conferred greater mRNA stability than the psbA \*\*\*5\*\*\* '-\*\*\*UTR\*\*\* on uidA transcripts. In contrast, the psbA \*\*\*5\*\*\* \*\*\*UTR\*\*\* enhanced translation of GUS to a much greater extent compared to the rbcL \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* . The psbA \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* also mediated light-induced activation of translation which was not obsd. with other constructs. Deletion mutagenesis of an unanalyzed terminal sequence element of the psbA \*\*\*5\*\*\* '- \*\*\*UTR\*\*\* resulted in a twofold drop in uidA-mRNA level and a fourfold decrease in translation efficiency. Exchange of 3'-UTRs results in up to fivefold changes of mRNA levels and does not significantly influence translation efficiency. The mech. impacts of these results on \*\*\*plastid\*\*\* translation regulation are discussed.

AN 132:147499 CA

In vivo analysis of \*\*\*plastid\*\*\* psbA, rbcL and rpl32 UTR elements by 
\*\*\*chloroplast\*\*\* \*\*\*transformation\*\*\* : tobacco \*\*\*plastid\*\*\*

gene expression is controlled by modulation of transcript levels and 
translation efficiency

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